Sea Survival

FIRST AID primary survey

- Check for further Hazards to you or casualty. Check if casualty is Responsive: Alert, Voice, Pain/Stimulus, Unresponsive
- 2. Get other survivors to help if possible
- 3. Check for and deal with any major bleeds
- 4. Airway Check clear and maintain Breathing Look, Listen and Feel for 10 secs (breathing & chest rising and falling) If breathing place casualty in recovery position but beware of CO₂ pooling if in a liferaft If NOT breathing get on comms to rescue forces now. Next: CPR 30 Chest compressions (rate of 120/min)

then 2 rescue breaths (till help / recovery / exhausted)

FIRST AID Top to Toe secondary survey

- 5. Circulation-Stop Bleeding
- a. Pressure pad on wound
- b. Raise the limb
- 6. Protect the Wound
- a. Clean dry dressings
- Burns—DO NOT remove burnt clothing or skin but cover lightly with clean dry dressings
- 7. Immobilise Fractures
- a. Arms-improvise splints or strap to body
- b. Legs-strap together and splint if possible
- Treat for Shock
 Rest–reassure (warm/not sweet drinks if no suspected internal injuries)

Water Aspiration: Closely monitor anyone who may have water in their lungs, even if they are initially fully alert and rational. They should be medically examined post rescue.

Your priorities at sea are: **Protection** Location Water **Food** In that order

Sea Protection

Ensure that you have:

- Streamed drogue
- Covered yourself (closed canopy/doors)
- Accounted for survivors (use rescue line & quoit)
- · Inflated floor
- · Baled out water
- Inflated canopy / closed doors (SSLR/MSLR)
- · Checked for damage (and listen)
- · First Aid
- · Found liferaft accessories and stowed them
- · Taken anti-sea sickness tablets

Check PLB if not already done so

Sea Protection (cont)

Avoid the hazards

COLD/HYPOTHERMIA-Keep covered up

WINDBURN/SUNBURN-Don't over expose (use barrier cream)

Sore eyes

- · Use visor
- · Wear sunglasses or eye shields
- · Don't rub with salty hands

Seasickness

· Take tablets, look at horizon and get fresh air

Salt water sores

- · Dry out liferaft
- Avoid excessive movement
- · Clean with fresh water if plenty available
- · Apply dry dressing

Immersion foot

- · Dry out liferaft and clothes
- Keep warm
- · Bandage with dry clothing
- Mild exercise for circulation
- Massage feet

Prevention is better than cure

Location

Ensure you have:

- Found and erected PLB (and checked operation, see pages 8–11)
- Found pyros— and prepared for instant use
- Checked McMurdo light illuminated (if daylight-empty water from battery, stow in dry place until nightfall)
- · Found heliograph and prepared

Stow aids-But ensure you have them readily available

Keep a good lookout and listening watch

In the last five minutes of each hour count seabirds—it's been shown that sighting 10 or more seabirds in 5 minutes puts you within 40 nautical miles of land in some regions. Plus the increased vigilance also improves your chance of spotting a potential rescue vessel.

Latitude	Mar 21	May 03	Jun 22	Aug 09	Sep 23	Nov 07	Dec 22	Feb 05
60° North	089	055	037	055	089	122	140	122
30° North	090	072	064	072	090	108	116	108
Equator	090	074	067	074	090	106	113	106
30° South	090	072	064	072	090	108	116	108
		Direction of Sunrise						



Check PSP/SMSP contents Minimise loss of body fluids by

 Avoiding sea sickness (take anti seasick pills: keep busy, look at horizon)

Avoid sweating & treat injuries

- Keep cool by allowing cool air into raft
- Adjust canopy, drogue
- Use your ROP/SeaPack

If short of water

- Don't drink for approx 24 hrs or until Headache stage is reached (unless injured or sweating profusely)
- Take small sips

Then

- Ration yourself for a 5-day max wait (Minimum of 1 litre per day)
- Use ROP/SeaPack
- Catch rain water (use canopy)—store in all available containers once the first salt has run off.

Never drink sea water!

Food

If short of water-

Eat nothing for as long as possible-then

Eat only carbohydrates

(ie Mk 4 emergency ration, not Mk 9)

Check PSP/SMSP for Survival rations

Food is of low priority (you can survive for weeks without eating)

FASTFIND Operation

To Switch On

- · Open yellow flip-top lid
- Take care to hold the unit away from your face as the next step makes the antenna spring out.
- Tear off red anti-tamper seal. (This exposes the ON button and releases the antenna)
- Press and hold the red ON button for 2 seconds
- After 2 minutes has elapsed the RED ON indicator light will start to slowly flash indicating that the PLB has started transmitting emergency alerts
- · The internal GPS antenna patch must be unobstructed
- · To turn off, press OFF button until LEDs extinguish
- · Keep antenna base cup clear of water, if possible

At Sea and on Land

 Position the PLB so that the antenna is pointing skywards and the internal GPS zone is clear of any obstructions

PRC 112G SARSAT

To activate SARSAT mode

- The body of the radio and its antenna should form a straight vertical line that is perpendicular to the Earth
- . Turn PRC on with the rotary 'Vol' dial
- Press SoftKeys:

Menu > 3RadioModes > 2SARSAT > 1Turn on SARSAT
Then select a 406 Mode (battery lasts longest in Mode 1)

A Canned Msg may be added to SARSAT by the sequence:
 MESG > Select/Send Msg > Canned Message & Save Only

To Turn off SARSAT

From the main satellite display screen press: Menu > 3RadioModes > 1Quit SARSAT



SARBE G2R Operation

To Enable GPS

- Unwind the GPS antenna
- Check connections
- Position outside liferaft canopy (unobstructed view of sky) by attaching to liferaft canopy's velcro or LMD stowage pocket

To Position Antennas

- Undo retaining velcro and allow antenna to straighten
- Check antenna's knurled connector is tight and secure.
- Position FLAT GPS antenna and VERTICAL 406 antenna as FAR APART as practicable. Try for at least 30cm
- Elevate VERTICAL 406 antenna as high as possible
- Position antennas so they have unobstructed view of the sky and horizon toward the equator, if possible
- Once GPS has acquired, its positioning is less critical, but monitor from time to time / adjust as necessary

To Arm the Beacon

Rotate switch clockwise to either:

- Locked padlock means keypad is disabled for transmit only
- · Unlocked symbol additionally enables Press-To-Talk

To Activate

Pull the red tape lanyard from the beacon. If armed, the beacon will start to transmit immediately. LED sequences are written on beacon

Only use PTT if rescue helo is flying into danger or having difficulty locating you (ie in mist/under thick forest canopy if on land)

To Deactivate, turn rotary switch fully anti-clockwise

ANTENNAS - CLEAR VIEW TOWARD EQUATOR AND AS HIGH AS POSSIBLE. 406 TRANSMIT ANTENNA VERTICAL

SARBE 7 Operation

Whilst activated automatically in most cases, this PLB (121.5/243 MHz only) will not be received by satellite / notify SAR forces. That MUST be done via a 406 MHz PLB (see page 8 or 9).

To Switch On

- Remove and discard activating pin
- Note Green LED flashing approximately every 2 secs
- Ensure that the aerial remains as vertical as possible
- In very cold conditions, keep beacon warm to prolong life

Subsequent On/Off

Use rotary knob on top of beacon

At Sea

Mount external aerial assembly:

- On lifepreserver in single seat liferafts and push through canopy
- · External mounting patch on multi-seat liferafts

On Land

If possible, place beacon 1.5 meters or higher above ground in the clear and attach aerial direct (vertical)

Self Test

- Raise LIFT TO TEST lever
- Conform Green LED flashes (NB this test does NOT check the aerial)

CHECK AERIAL CONNECTIONS CAREFULLY, ESPECIALLY WHEN RECONNECTING. KEEP (OR BLOW) SOCKET DRY

Multiple Beacon Operation

If you have a variety of beacons:

G2R and SARBE 7

- If G2R operating satisfactorily, switch SARBE 7 off
- Monitor G2R LEDs to confirm GPS acquisition
- Elevate GPS antenna & keep it separate from transmitting antenna until it acquires GPS lock
- Co-axial cable is delicate

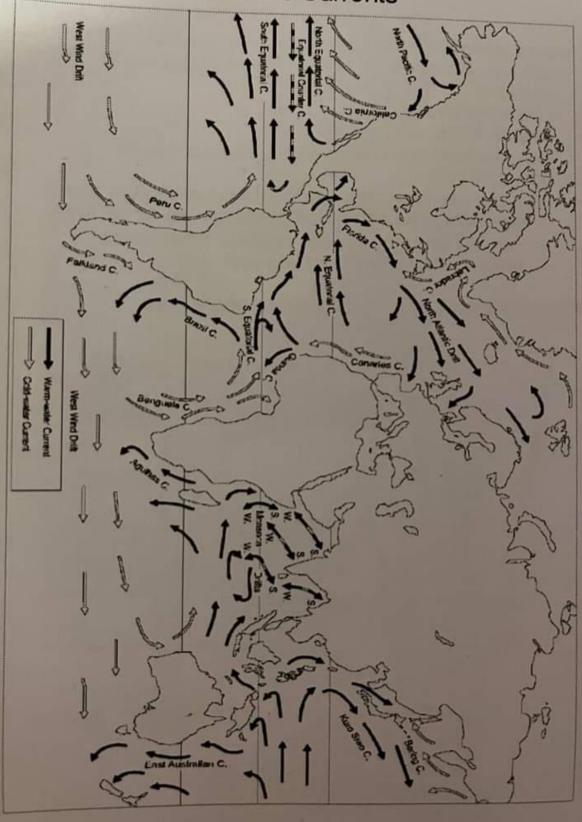
G2R and FASTFIND

- Prioritise on the G2R.
- Leave FASTFIND off unless there is a likelihood you will lapse into unconsciousness. Use as back up to G2R if that fails
- Monitor that G2R GPS acquisition occurs within 10 minutes, and then take action if/as required (elevate antenna, etc or use FASTFIND if that doesn't solve problem)

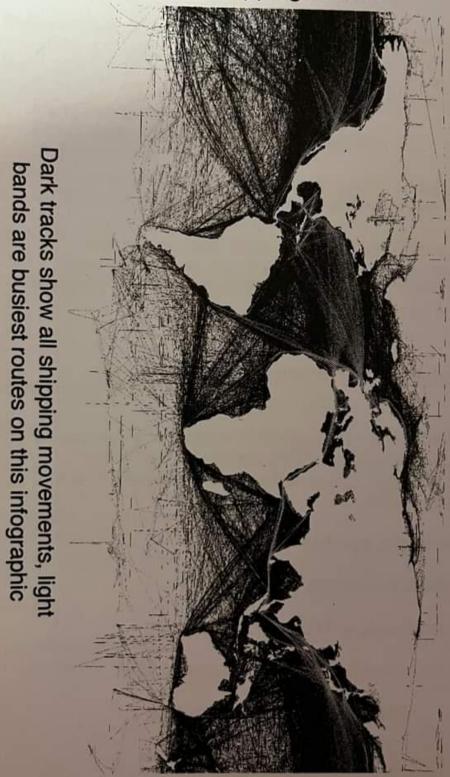
FASTFIND and SARBE 7

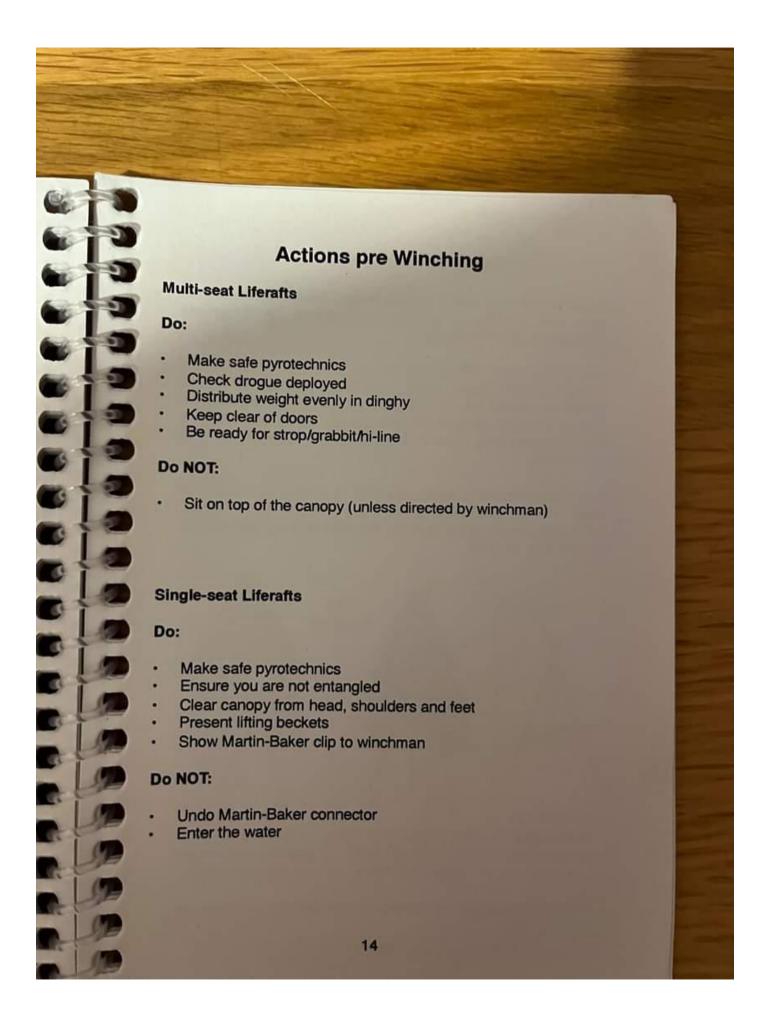
- Both ON, antennas vertical
- Separate beacons as much as practicable
- FASTFIND antenna should have a clear view towards the equator
- FASTFIND transmits on 406 & 121.5 MHz NOT 243 MHz

Oceanic Currents



Global Shipping Routes





Land Survival

FIRST AID primary survey

 Check for further Hazards to you or casualty. Check if casualty is Responsive:

Alert, Voice, Pain/Stimulus, Unresponsive

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- 3. Check for and deal with any major bleeds
- Airway Check clear and maintain Breathing Look, Listen and Feel for 10 secs (breathing & chest rising and falling)

If breathing place casualty in recovery position
If NOT breathing get on comms to rescue forces now. Next:

CPR 30 Chest compressions (rate of 120/min)
then 2 rescue breaths (till help / recovery / exhausted)

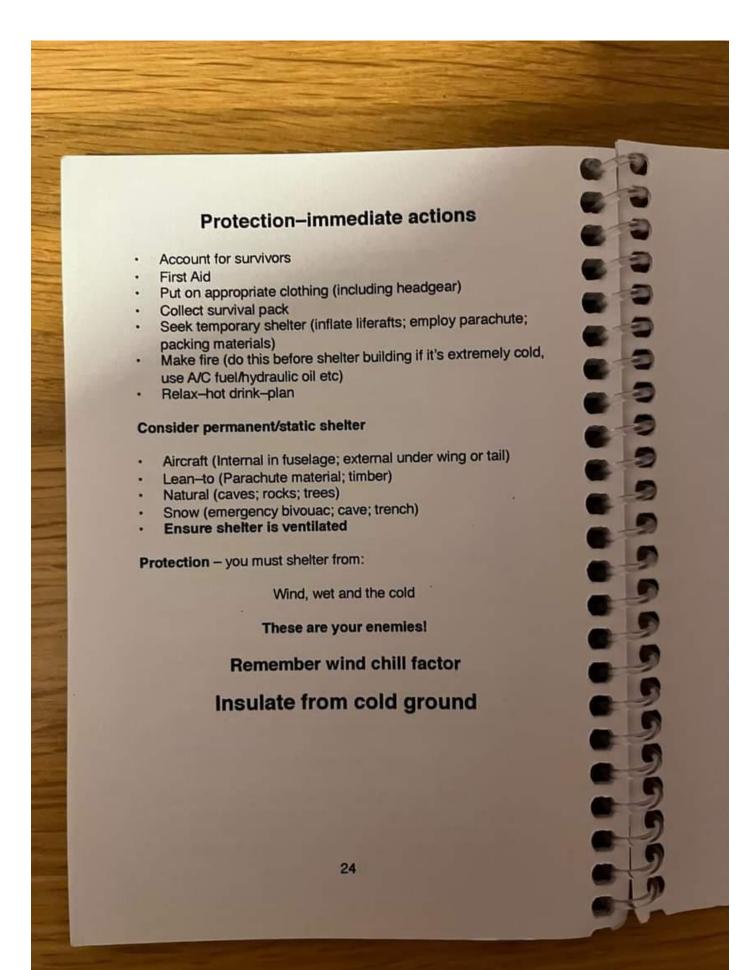
FIRST AID Top to Toe secondary survey

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- b. Raise the limb
- 6. Protect the Wound
- a. Clean dry dressings
- Burns—DO NOT remove burnt clothing or skin but cover lightly with clean dry dressings
- 7. Immobilise Fractures
- a. Arms-improvise splints or strap to body
- b. Legs-strap together and splint if possible
- 8. Treat for Shock

Rest-reassure (warm/hot sweet drinks if no suspected internal injuries)

See page 35 for survival in hostile territory

Your priorities are: **Protection** Location/Concealment Water **Food** In that order 23



Freezing Cold Injuries (FCI)

The parts of the body most prone to freezing are the extremities and any exposed flesh—face, fingers, toes, heels and soles of the feet. FCI ranges from **frost nip**—where people recover fully within 30 mins of re-warming of the injured part—and **frost bite** which goes deeper and causes longer lasting damage.

Early signs (frost nip):

- · The affected part feels cold and painful
- · A tingling sensation followed by numbness
- · No feeling when the affected part is moved
- · Skin looks mottled-white and pink

Later signs (frost bite):

- · No feeling in the affected part
- Skin white and waxy looking
- · A clear line between white and pink skin
- Eventually (usually after re-warming) skin may appear bruised and blistered

Treatment:

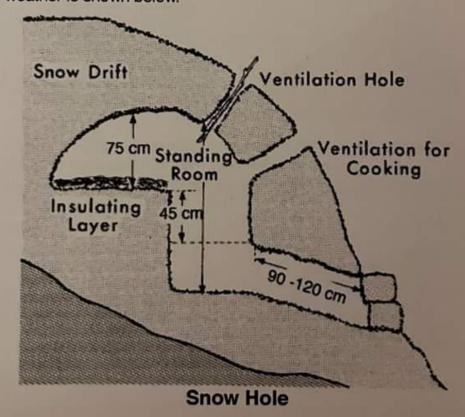
- · Get into shelter
- · Protect affected part
- Warm affected part with body heat. Face=place warm hand or inside of warm glove against affected part. Hands= place inside clothing under armpits. Feet= remove boots and socks before warming, if partner available use their body for warmth.
- If possible remain sheltered until rescue
- Do NOT re-warm if there is any danger of re-freezing.
- . Do NOT apply direct heat such as fire or rub frozen part
- Do NOT thaw out frozen feet if walking necessary
- . Do NOT use snow or ointments (e.g. "Deep Heat")

Shelters-Extreme Cold Weather

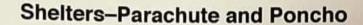
Beware of avalanche prone slopes-look for debris at bottom of slope.

Snow Shelters

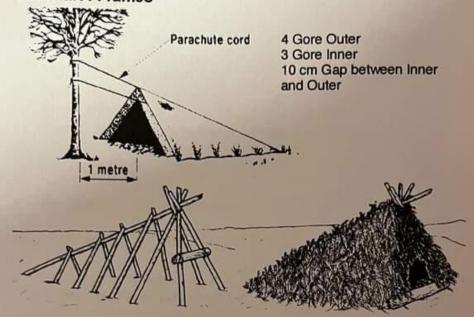
The top of any entrance to a snow shelter should be lower than the sleeping bench, to ensure that inhabitants make maximum use of the warm air trapped in the ceiling. Smooth the ceiling to prevent dripping. Ensure ventilation hole is unblocked. Dress down while working. A good, quick shelter to get out of the weather is shown below.



If you are below the tree line light a sustainable fire first, then build an a-frame or lean-to type shelter (page 27).



Thermal A-Frames



Thermal A-Frames are easy to build and keep warm. Angle the sides no shallower than 45°. Use plenty of material for a mattress. Cover until you can't see daylight through the thatch.

Lean-to Shelters



Lean-to's are quick to build but require a fire in front to keep them warm. Use a wrist thick green pole at sternum height for the cross beam BEHIND the two trees. Angle the roof no shallower than 45°. Thatch and bedding as for an A-Frame above.

Location

Aircraft Radio

Erect PLB/SARBE and check operation (page 8,9,10,11)

- · Place on high ground
- Aerial vertical
- Avoid shielding
- · Protect battery from extreme temps

Pyros Checked

· Prepared for immediate use

Light Signals

- · Heliograph mirror
- Candle lit inside para shelter
- Burn fuel impregnated materials or tyres

Improvised Signals

- Inflate liferaft and lifejackets
- Parachute deployed and pegged down
- · Reflective materials from aircraft (light and radar reflective)
- Snow signals (10m long)

Signal Fire

- Smoke by day
- · Fire by night

Break up the 'Natural Look' of the terrain (shape, shine, movement etc; the opposite of camouflage principles)

Develop and practice roles on sighting SAR assets (your 'Location Action Plan'). Know each other's tasks.

Water

- Salvage sources from aircraft
- Check PSP/SMSP contents
- · Replenish supplies constantly
- Use the ROP/SeaPack

Use Natural Sources First

(ie Rain; Streams; Lakes; Marshes; Old Sea Ice). Look for greenery to show you where water is.

Wrap clear plastic bag (go-pack/rubbish bag) around nonpoisonous foliage and tie end closed. This will produce more water daily than a solar still. Consider digging down to water but remember to ration your sweat.

Drink as much as thirst dictates-to avoid dehydration

Purify by boiling; Filter through cloth first then boil. As soon as water gets to a rolling boil with big bubbles it's disinfected regardless of altitude. Use puritabs as per their instructions if boiling is not possible.

ICE is better to melt than SNOW

Don't eat SNOW or suck ICE

(See also water section of Sea Survival page 6)

Do not ration water in Desert conditions or if injured.

You will need at least 1 litre / day

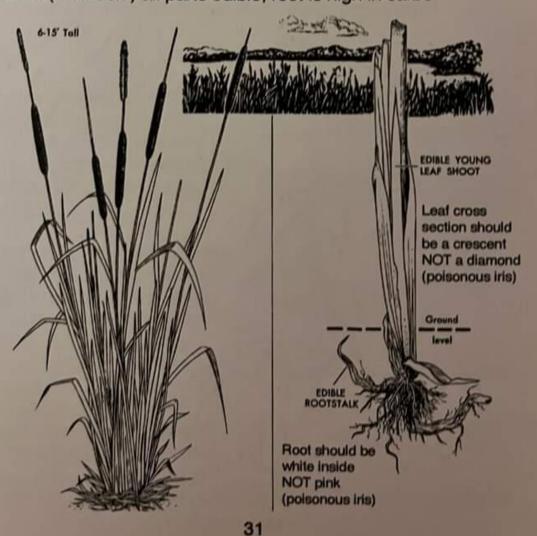
Food

Food is not an immediate requirement for survival

- Salvage rations from aircraft (eat in-flight rations first if possible)
- Check PSP/SMSP contents
- Use Mk 4 rations to provide energy
- Don't eat other food unless water available or you will dehydrate body
- Consider 'natural sources'- plants (100% Identification: go for nettles, dandelions, cattail, pine needle tea), do not eat fungi.

- Insects, fish, animals, (use kits, see page 34 for insects)
- All food should be cooked and taken hot

Cattail ('Bullrush') all parts edible, root is high in carbs



Survival Navigation

Orientation without a compass: Night



If the stars are not visible a line through the tips of a crescent moon will point approximately south (N Hemisphere)

Day

Push a straight 1m stick vertically into the ground. Mark the tip of its shadow. Only the shortest shadow at midday will give an accurate N/S line.

If it's not midday, wait at least 15 minutes and repeat. The marks will form a line giving an approximate indication of E/W. If this is done either side of midday it will be accurate. The diagram shows the orientation of shadow marks for N hem. This technique can also be used with a bright moon at

E 90° N

night. For solar azimuths, see Sea Survival, Location on page 5.

Desert

Protection

- Stay where you are unless certain of water source
- First Aid
- Obtain shelter from sun using parachute/liferaft/aircraft/ natural features
- Keep body and head covered with multiple layers of loose clothing
- Protect eyes from glare
- Relax-plan-rest during day
- Dig shelter floor lower than ground level to reduce temperature

Location

- · Get PLB working. Protect battery from direct sunlight
- · Pyros and heliograph ready for immediate use
- · Improving ground markers with fire/smoke ready if possible

Water

- Ration your sweat
- · Check total resources of water
- Drink to off-set the headache stage of dehydration
- Don't ration your water
- Consider natural resources available—look for greenery
- Use ROP whenever possible

Food

- Lowest priority
- Mk 4 ration is not dehydrating and is a useful source of energy

Jungle

Protection-Never Travel at Night

- Apply first aid, build a shelter off the ground if possible using parachute material—upturned inflated liferaft—natural materials—aircraft. Check vicinity for deadfall first.
- Keep a fire burning-dry clothing to sleep in
- Keep covered—remove ticks or leeches
- Treat insect bites and keep clean
- Avoid contact with insects and snakes and always check wood or kit before picking it up

Location

- · Site location aids near watercourses or clearings
- Beware of deadfalls during helicopter recovery

Water

- Conserve supplies from aircraft or packs
- Set out rain traps with liferaft canopies and parachutes
- Purify all standing water by BOILING (page 30)
- Most jungle vines contain drinkable fluids but avoid red or milky saps or bitter tasting ones

Food

- The hearts of all palms are edible. Chop out part in the centre just below growing leaves. Will be soft not woody, full of carbs
- Catch green or brown insects by dropping your hat on them and cook over coals on a skewer/ add to stews
- Do NOT eat insects that are hairy, bright colours or associated with human habitation (vectors of disease)
- Catch shrimp with mosquito head net by overturning streambed stones

Evasion

The aims of an evader are:

- 1. To Stay Alive
- 2. To Avoid Capture
- 3. To Return to Safety

IN THAT ORDER!!

Your Priorities are:

Protection Concealment Water Food

Immediate Actions

- Break Contact (if viable call for E-CAS see page 36)
- Administer first aid (for life threatening injuries)
- Destroy classified material and sensitive equipment or weapons
- · Conceal unnecessary equipment and move to cover
- Determine your location
- Establish initial communications with friendly forces. All future communications should be in accordance with appropriate procedures (e.g. EPA, SPINS, etc.)

Evasion (see also pages 38 and 39)

- Leave no sign
- · Move on foot by night or during poor vis
- Avoid roads, railways, rivers, towns, people
- Make your hides covert

Remember the Priorities

Requesting E-CAS

Request for Emergency Close Air Support (E-CAS) example:

· "Hello C/S, this is C/S,

E-CAS, E-CAS, E-CAS."

(eg: "Sandy lead, this is Goat 34A,

E-CAS, E-CAS, E-CAS")

· Authentication.

"I am not JTAC qualified."

· Location of friendly forces

6 fig grid if possible

· Method of marking friendlies

(eg: I will mark my position with a strobe on your command") Tgt Location

(eg: "Enemy 800m north of my position, 10 fig grid if possible)

Tgt Description

(eg: 2 trucks plus 8 personnel with small arms)

· When wanted

(eg: Support required immediately)

· "STOP, STOP, STOP"

to halt an attack

If you have comms yet limited mobility and ammunition, this can provide vital assistance before you are recovered.

Evasion-Comms

PRC 112B1/G

Orientate towards friendly forces, ensure correct frequency selected, extend the antenna (do not earth it onto anything)

For LOS comms have antenna vertical.

For OTH comms have antenna at 45° and face the equator.

Communicate as per your EPA, keep voice transmissions to less than 3 secs. Wait 30 sec between OTH msgs to prevent unit overheating.

If no comms check battery strength: Menu > 1Power > Battery Status. Should be ≥ 9V if not, attach fresh battery.

Remember when text messaging you must choose one of Send & Delete, Send & Save or Save Only options to put message into outbox for sending. Only use "Hard Key" SND if msg in outbox or when completing a SITREP.

If no joy continue as per your long term EPA but keep trying to establish comms; higher ground, fewer obstructions, face in different directions, change battery, check frequency/mode.

POS softkey will give your GPS position, NAV softkey can give a rng & brg to one of your stored wpts.

To purge radio use DEL hardkey. All radio channels still available afterwards.

GTAS

When creating a GTAS use high ground that isn't overlooked. Make edges straight and angles as accurate as possible. Have visual signalling devices ready for use if you positively identify friendly aircraft or remotely piloted vehicles

Evasion Shelters

Identify your Lay Up Point (LUP) from a distance and enter it by a fish-hook shaped route. Your LUP should allow you to be concealed from view but have a good field of view for watching the loop to give you warning of compromise and time to bug out. You could be in the LUP for 12hrs so get water before entering and ensure you have good comms.

An evasion shelter should provide you with substantial protection from the elements and also concealment from the enemy. Shelters may be just a Bivi bag in a ditch (consider making a slit in the side half way up for ease of exit), a poncho or evasion map pulled round your shoulders or just a bush that you have crawled into. Your CamoTek sheet creates excellent immediate camouflage, but needs 30 cm of separation from you to defeat thermal imagers. Remember the mnemonic BLISS.

- B Blend in
- L Low in silhouette
- I Irregular in shape (outline)
- S Small / secluded
- S Survivable

Remove all traces of your stay before moving on. If natural materials have been used to build a hide that is well camouflaged, leaving the site intact may draw less attention than scattering it around. If lengthy moves are to be made with multiple hides any LUP sites left in an untidy condition with evidence of recent occupation will attract the attention of hostile forces. If two such camps are found they will provide a good indication of the direction and rate of travel.

If a prolonged stay in one shelter is anticipated, the site should be chosen to have reasonable access so that trails are not worn. If this is not possible it may be preferable to limit the stay in any one shelter to a maximum of two nights.

Evasion Movement by Night and Day

- Don't be overconfident—travel by night is preferable, or in low visibility if daytime movement is unavoidable
- Have CamoTek readily available
- Memorise your route—split into easy sections
- · Do not travel more than 500m in a straight line
- Plan for obstacles—roads, rivers, populated areas, use ENVIS
- Avoid Skylines
- Avoid Populated Areas—curfews, children, dogs, patrols
- · Always have an emergency RV-ensure group are aware

- · Avoid prominent features on maps
- Avoid isolated caves
- Avoid deserted buildings
- DO NOT attempt sabotage
- There is seldom a need to hurry
- Pause regularly and 'tune in' to your environment
- Use the action sequence:

MOVE ➤ HALT ➤ LISTEN ➤ OBSERVE ➤ MOVE again

Resistance-what to do if captured

Captive's Estimate:

- · Who are you?
- Who is your captor?
- What does your captor want?
- What will they do?

Identify yourself to your captor when asked

· Ask for help

It is your duty to protect information

Be aware of media interaction and the repercussions

99999999999999999999

- Cameras
- Writing statements
- Oral statements

Think about possible outcomes to captivity

- · Escape considerations
- Rescue
- Release

Preserve your life and that of your colleagues

- Be polite and respectful
- Remember you are a member of the British Armed Forces
- Obey reasonable commands
- · Don't remain silent
- · Humanise yourself

Resistance—what to do if captured continued

The Service Test:

"Have the actions or behaviour of an individual adversely impacted or are they likely to impact on the efficiency or operational effectiveness of the Armed Forces."

Core Values and Standards in the Armed Forces

Royal Navy/RM	Army	RAF
Commitment	Selfless commitment	Respect
Courage	Respect for others	Integrity
Discipline	Loyalty	Service
Respect for others	Integrity	Excellence
Integrity	Discipline	
Lovalty	Courage	

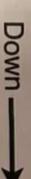
Remember: Return with Dignity

Resistance—what to do if captured continued

"Tap Code"

A B C/K D E
F G H I J
L M N O P
Q R S T U
V W X Y Z

then Across -



Extraction

- · Remember your personal info
- A good SITREP helps your Recovery Force
- Follow Recovery Force instructions

HLS Selection

- Recce 30-50m clear site
- Max 10 degree slope
- · No wires, trees or fences
- Good comms

Helo Vectoring

- Play an active part in your recovery
- When heard vector helo to you
 - Remember: PTT disengages SATCOM mode

- Update as required, keep it simple
- Initiate location device as directed/required

Prep for Recovery

- · Non-threatening posture; earpiece in
- · Signalling device and backup device ready
- · All kit ready to grab and go
- Secured for downwash of helo

Any suitable combination of vehicles and troops can be your Recovery Force. Good Comms are vital for a speedy recovery

JSP 374

Aircrew SERE Flip Card Sea Survival

First Aid	
Priorities	1
Protection	2
Protection (cont)	3
Location	4
Water	5
Food	6
406 MHz FastFind/PRC112G Operation	/
406 MHz SARBE G2R Operation	8
SARBE 7 Operation	10
Multiple Beacon Operation	11
Oceanic Currents	12
Global Shipping Routes	13
Actions pre Winching	14
For Notes and Log Keeping	15-22

September 2013 Ministry of Defence Defence SERE Training Organisation (DSTO)

see reverse for Land SERE

Sea Survival Cover

JSP 374

Aircrew SERE Flip Card Land SERE

Survival First Aid 22 **Priorities** 23 Protection 24 Freezing injuries 25 Shelters-Extreme Cold Weather 26 Shelters 27 Location 28 Signal Fire 29 Water 30 Food 31 Survival Navigation 32 Desert 33 Jungle 34 Evasion 35 Requesting E-CAS 36 **Evasion Comms** 37 **Evasion Shelters** 38 **Evasion Movement** 39 Resistance 40-42 Extraction 43

September 2013 Ministry of Defence Defence SERE Training Organisation (DSTO)

see reverse for Sea Survival

Land Cover